

=> s cunninghamel?(l)bainie?

1035 CUNNINGHAMEL?

290 BAINIE?

L2 45 CUNNINGHAMEL? (L) BAINIE?

=> s l2 and piperidin?

91252 PIPERIDIN?

L3 1 L2 AND PIPERIDIN?

=> d bib abs

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:505445 CAPLUS

DN 137:78004

TI Process for the production of piperidinyhydroxybutylphenyldimethylac  
etates via microbial oxidation.

IN Michels, Peter C.; Zirbes, Eric L.

PA USA

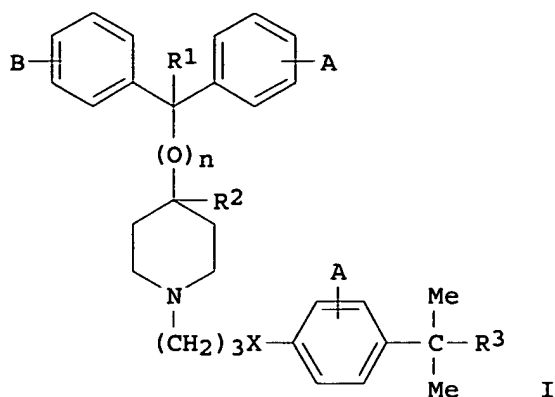
SO U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Ser. No. 708,959.  
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002087003	A1	20020704	US 2001-754786	20010104
	US 6613907	B2	20030902		
	CA 2427387	AA	20021024	CA 2001-2427387	20011106
	WO 2002083062	A2	20021024	WO 2001-US43714	20011106
	WO 2002083062	A3	20030103		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP	1339864	A2	20030903	EP 2001-273746	20011106
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP	2004522454	T2	20040729	JP 2002-580867	20011106
BR	2001015191	A	20041214	BR 2001-15191	20011106
NZ	526040	A	20051028	NZ 2001-526040	20011106
NO	2003001974	A	20030613	NO 2003-1974	20030430
US	2005038254	A1	20050217	US 2003-638841	20030811
PRAI	US 2000-708959	A2	20001108		
	US 2001-754786	A	20010104		
	WO 2001-US43714	W	20011106		
OS	CASREACT 137:78004; MARPAT 137:78004				
GI					



AB Title compds. [I; n = 0, 1; R1 = H, OH; R2 = H; or, when n = 0, R1R2 = bond; provided that when n = 1, R1 and R2 both = H; R3 = CO2H, CO2R4; R4 = alkyl, aryl; A, B, D = H, halo, alkyl, OH, alkoxy; X = CO, CH(OH)], were prepared by incubating I (R3 = Me; other variables as above) with a microorganism of a genus selected from Streptomyces, Stemphylium, Gliocladium, Bacillus, Botrytis, Cyathus, Rhizopus, Pycnidiosphora, Pseudomonas, Helicostylum, Aspergillus, Mucor, Gelasinospora, Rhodotorula, Candida, Mycobacterium, or Penicillium. Alternatively, the microorganism can be *Cunninghamella bairdii*. Thus, terfenadine was incubated with *Streptomyces rimosus* NRRL-2234 in a soybean flour medium at 29° to give a product containing 76% terfenadine acid metabolite.

=> s cunninghamel? and (terfen? or fexofena?)

1035 CUNNINGHAMEL?

1768 TERFEN?

545 FEXOFENA?

L4 4 CUNNINGHAMEL? AND (TERFEN? OR FEXOFENA?)

=> d bib abs hit 1-4

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:505445 CAPLUS

DN 137:78004

TI Process for the production of piperidinyhydroxybutylphenyldimethylacetate s via microbial oxidation.

IN Michels, Peter C.; Zirbes, Eric L.

PA USA

SO U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Ser. No. 708,959.

CODEN: USXXCO

DT Patent

LA English

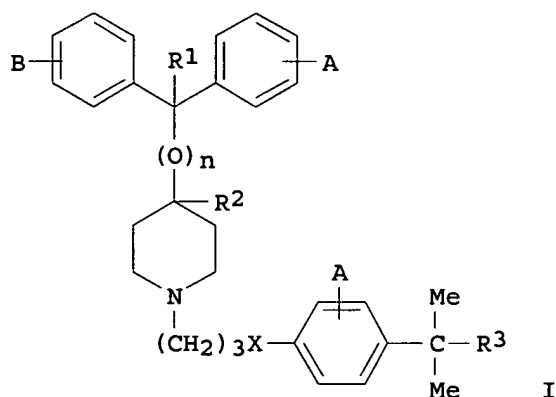
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002087003	A1	20020704	US 2001-754786	20010104
	US 6613907	B2	20030902		
	CA 2427387	AA	20021024	CA 2001-2427387	20011106
	WO 2002083062	A2	20021024	WO 2001-US43714	20011106
	WO 2002083062	A3	20030103		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 EP 1339864 A2 20030903 EP 2001-273746 20011106  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2004522454 T2 20040729 JP 2002-580867 20011106  
 BR 2001015191 A 20041214 BR 2001-15191 20011106  
 NZ 526040 A 20051028 NZ 2001-526040 20011106  
 NO 2003001974 A 20030613 NO 2003-1974 20030430  
 US 2005038254 A1 20050217 US 2003-638841 20030811  
 PRAI US 2000-708959 A2 20001108  
 US 2001-754786 A 20010104  
 WO 2001-US43714 W 20011106  
 OS CASREACT 137:78004; MARPAT 137:78004  
 GI



- AB Title compds. [I; n = 0, 1; R1 = H, OH; R2 = H; or, when n = 0, R1R2 = bond; provided that when n = 1, R1 and R2 both = H; R3 = CO2H, CO2R4; R4 = alkyl, aryl; A, B, D = H, halo, alkyl, OH, alkoxy; X = CO, CH(OH)], were prepared by incubating I (R3 = Me; other variables as above) with a microorganism of a genus selected from Streptomyces, Stemphylium, Gliocladium, Bacillus, Botrytis, Cyathus, Rhizopus, Pycniodosphora, Pseudomonas, Helicostylum, Aspergillus, Mucor, Gelasinospora, Rhodotorula, Candida, Mycobacterium, or Penicillium. Alternatively, the microorganism can be *Cunninghamella bainieri*. Thus, **terfenadine** was incubated with *Streptomyces rimosus* NRRL-2234 in a soybean flour medium at 29° to give a product containing 76% **terfenadine** acid metabolite.
- AB Title compds. [I; n = 0, 1; R1 = H, OH; R2 = H; or, when n = 0, R1R2 = bond; provided that when n = 1, R1 and R2 both = H; R3 = CO2H, CO2R4; R4 = alkyl, aryl; A, B, D = H, halo, alkyl, OH, alkoxy; X = CO, CH(OH)], were prepared by incubating I (R3 = Me; other variables as above) with a microorganism of a genus selected from Streptomyces, Stemphylium, Gliocladium, Bacillus, Botrytis, Cyathus, Rhizopus, Pycniodosphora, Pseudomonas, Helicostylum, Aspergillus, Mucor, Gelasinospora, Rhodotorula, Candida, Mycobacterium, or Penicillium. Alternatively, the microorganism can be *Cunninghamella bainieri*. Thus, **terfenadine** was incubated with *Streptomyces rimosus* NRRL-2234 in a soybean flour medium at 29° to give a product containing 76% **terfenadine** acid metabolite.
- ST carboxyterfenadine prepn; benzeneacetate hydroxy hydroxydiphenylmethyl piperidinybutyl dimethyl microbial prepn; **terfenadine** microbial oxidn; piperidinyhydroxybutylphenyldimethylacetate prepn
- IT Absidia spinosa

Aspergillus  
 Bacillus (bacterium genus)  
 Bacillus cereus  
 Botrytis  
 Candida  
     Cunninghamella bainieri  
     Cunninghamella echinulata  
 Cyathus (fungus)  
 Fermentation  
 Gelasinospora  
 Gliocladium  
 Gliocladium deliquescens  
 Helicostylum  
 Mucor  
 Mycobacterium  
 Penicillium  
 Pseudomonas  
 Pycnidioophora  
 Rhizopus  
 Rhizopus oryzae  
 Rhodotorula  
 Stemphylium  
 Streptomyces  
 Streptomyces catenulae  
 Streptomyces cavourensis  
 Streptomyces griseus  
 Streptomyces rimosus  
 Ulocladium consortiale  
 Westerdykella dispersa

(process for production of piperidinyhydroxybutylphenyldimethylacetates via microbial oxidation)

IT 83799-24-0P, Terfenadine acid metabolite

RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation)

(process for production of piperidinyhydroxybutylphenyldimethylacetates via microbial oxidation)

IT 50679-08-8, Terfenadine

RL: RCT (Reactant); RACT (Reactant or reagent)

(process for production of piperidinyhydroxybutylphenyldimethylacetates via microbial oxidation)

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:706359 CAPLUS

DN 133:280646

TI Procedure for the biocatalyzed regioselective oxidation of terfenadine

IN Schmitz, Guenther; Takors, Rald; Weuster-Botz, Dirk; Wandrey, Christian

PA Forschungszentrum Julich G.m.b.H., Germany

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

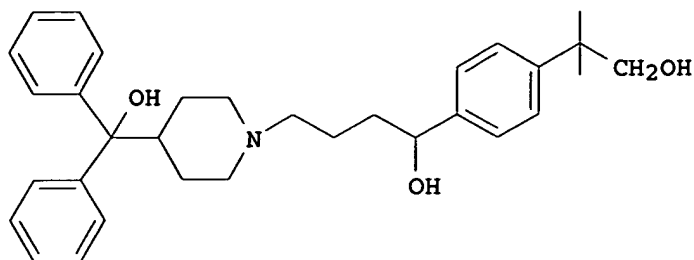
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	DE 19913862	A1	20001005	DE 1999-19913862	19990326
	DE 19913862	C2	20030410		
PRAI	DE 1999-19913862		19990326		

GI



I

AB A process is provided for the biocatalytic conversion and separation of a racemic compound that has low water solubility in a membrane coupled bioreactor.

In this process the substrate compound which is in microcryst. form and the biocatalyst are retained in the bioreactor while the product is removed via crossflow filtration. Thus **terfenadine** was biocatalyzed by *Cunninghamella blakesleeana* to an alc.(I) in a membrane coupled stirred tank fermentor. The alc. I was then removed from the fermentor through coupled crossflow filter membrane while the microbial cells and microcryst. **terfenadine** were retained. After eighty hours of fermentation, the concentration of I rose to ~ 200 mg/l and removed at this level for

the remaining 120 h of fermentation A total of 900 mg/l of I was produced over the course of the fermentation The alc. produced, I, was recovered from the permeate by ion exchange chromatog. Also in the scope of the invention is the conversion of I to the carboxylic acid **fexofenadine** which is facilitated by the activation of the tert-Bu group of **terfenadine** to an alc. by the regioselective oxidation

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Procedure for the biocatalyzed regioselective oxidation of **terfenadine**

AB A process is provided for the biocatalytic conversion and separation of a racemic compound that has low water solubility in a membrane coupled bioreactor.

In this process the substrate compound which is in microcryst. form and the biocatalyst are retained in the bioreactor while the product is removed via crossflow filtration. Thus **terfenadine** was biocatalyzed by *Cunninghamella blakesleeana* to an alc.(I) in a membrane coupled stirred tank fermentor. The alc. I was then removed from the fermentor through coupled crossflow filter membrane while the microbial cells and microcryst. **terfenadine** were retained. After eighty hours of fermentation, the concentration of I rose to ~ 200 mg/l and removed at this level for

the remaining 120 h of fermentation A total of 900 mg/l of I was produced over the course of the fermentation The alc. produced, I, was recovered from the permeate by ion exchange chromatog. Also in the scope of the invention is the conversion of I to the carboxylic acid **fexofenadine** which is facilitated by the activation of the tert-Bu group of **terfenadine** to an alc. by the regioselective oxidation

ST *Cunninghamella* **terfenadine** biooxidn membrane sepn

IT *Cunninghamella blakesleeana*  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT Oxidation  
(biol.; biocatalyzed regioselective oxidation of **terfenadine**)

IT Fermentation apparatus  
(cell recycle fermentor, crossflow membrane coupled; biocatalyzed regioselective oxidation of **terfenadine**)

IT Fermentation  
(fed-batch; biocatalyzed regioselective oxidation of **terfenadine**)  
)

IT Oxidation  
(regioselective; biocatalyzed regioselective oxidation of **terfenadine**)

IT 83799-24-0P, **Fexofenadine**  
RL: BMF (Bioindustrial manufacture); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT 76815-56-0P  
RL: BPN (Biosynthetic preparation); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT 50679-08-8, **Terfenadine**  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT 67-56-1, Methanol, uses 67-68-5, DMSO, uses 68-12-2, DMF, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT 37380-42-0, XAD-4  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(biocatalyzed regioselective oxidation of **terfenadine**)

IT 9003-07-0, Polypropylene  
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(membrane composition; biocatalyzed regioselective oxidation of **terfenadine**)

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:505927 CAPLUS

DN 133:334093

TI Regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**

AU Schmitz, G.; Franke, D.; Stevens, S.; Takors, R.; Weuster-Botz, D.;  
Wandrey, C.

CS Institute of Biotechnology, Research Centre Juelich, Juelich, D-52428,  
Germany

SO Journal of Molecular Catalysis B: Enzymatic (2000), 10(1-3), 313-324  
CODEN: JMCEF8; ISSN: 1381-1177

PB Elsevier Science B.V.

DT Journal

LA English

OS CASREACT 133:334093

AB The regioselective oxidation of **terfenadine** with the fungi  
**Cunninghamella blakesleeana** was studied as a biochem. alternative  
for the chemical synthesis of the antihistaminic drug **fexofenadine**.  
It was demonstrated that *C. blakesleeana* oxidizes the tert-Bu group of  
**terfenadine** to the corresponding alc. 1-[4-(1,1-dimethyl-2-  
hydroxyethyl)phenyl]-4-[4-(hydroxydiphenylmethyl)-1-piperidinyl]-1-  
butanol. A continuous process for regioselective oxidation of  
**terfenadine** was developed. **Terfenadine** was supplied  
micro-crystalline due to the low solubility in water. Optimum reaction  
conditions  
with respect to medium composition, temperature, pH, pO<sub>2</sub>, co-substrate and  
feeding  
rates were found by means of reaction engineering studies. A cross-flow  
microfiltration unit was operated in a bypass of a lab-scale stirred tank  
reactor for retention of the biocatalysts and the micro-crystalline substrate.  
The alc. was continuously removed with the filtrate to minimize product  
inhibition. Continuous biotransformation of micro-crystalline  
**terfenadine** with *C. blakesleeana* in the membrane reactor system  
with a dilution rate of 33 h at co-substrate concns. of about 1 up to 3 g/l  
glycerol in the reactor resulted in a space-time yield of 145 mg of  
alc./l/day and an alc. yield of 71%. The produced alc. was easily

isolated from the filtrate by adsorption on XAD-4 resin followed by elution with methanol (concentration factor 7).

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**

AB The regioselective oxidation of **terfenadine** with the fungi  
**Cunninghamella blakesleeana** was studied as a biochem. alternative  
for the chemical synthesis of the antihistaminic drug **fexofenadine**.  
It was demonstrated that **C. blakesleeana** oxidizes the tert-Bu group of  
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hydroxyethyl)phenyl]-4-[4-(hydroxydiphenylmethyl)-1-piperidiny]-1-  
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rates were found by means of reaction engineering studies. A cross-flow  
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reactor for retention of the biocatalysts and the micro-crystalline substrate.  
The alc. was continuously removed with the filtrate to minimize product  
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**terfenadine** with **C. blakesleeana** in the membrane reactor system  
with a dilution rate of 33 h at co-substrate concns. of about 1 up to 3 g/l  
glycerol in the reactor resulted in a space-time yield of 145 mg of  
alc./l/day and an alc. yield of 71%. The produced alc. was easily  
isolated from the filtrate by adsorption on XAD-4 resin followed by  
elution with methanol (concentration factor 7).

ST **Cunninghamella terfenadine** regioselective oxidn

IT Oxidation

(biol.; regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Fermentation apparatus

(cell recycle fermentor, with a crossflow membrane filter;  
regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Fermentation

(continuous; regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Yeast

(extract; regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Fermentation

(fed-batch; regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Soybean (Glycine max)

Soybean (Glycine max)

(flour; regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT **Cunninghamella blakesleeana**

(regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Lecithins

Soybean oil

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
(Biological study); PROC (Process)

(regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Polyoxyalkylenes, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(regioselective oxidation of **terfenadine** with  
**Cunninghamella blakesleeana**)

IT Oxidation

(regioselective; regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT Flours and Meals  
Flours and Meals  
(soybean; regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT Optimization  
(statistical; regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 101-84-8, Diphenyl ether 106-42-3, p-Xylene, biological studies  
111-87-5, 1-Octanol, biological studies 112-12-9, 2-Undecanone  
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 76815-56-0P  
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
(Preparation)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 50-21-5, Lactic acid, biological studies 50-99-7, Dextrose, biological  
studies 56-81-5, Glycerol, biological studies 57-48-7, D-Fructose,  
biological studies 59-23-4, D-Galactose, biological studies 64-19-7,  
Acetic acid, biological studies 69-65-8, Mannitol 77-92-9, Citric  
acid, biological studies 544-76-3, Hexadecane 7782-44-7, Oxygen,  
biological studies 9005-25-8, Starch, biological studies  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
(Biological study); PROC (Process)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 50679-08-8, Terfenadine  
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT  
(Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or  
reagent)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 83799-24-0, Fexofenadine  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

IT 64-17-5, Ethanol, processes 67-56-1, Methanol, processes 67-68-5,  
DMSO, processes 68-12-2, DMF, processes 123-95-5 25322-68-3,  
Polyethylene glycol  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(regioselective oxidation of terfenadine with  
Cunninghamella blakesleeana)

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1999:614162 CAPLUS  
DN 131:213195  
TI Novel method for preparing fexofenadine  
IN Azerad, Robert; Biton, Jacques; Lacroix, Isabelle  
PA Hoechst Marion Roussel, Fr.  
SO PCT Int. Appl., 34 pp.  
CODEN: PIXXD2  
DT Patent  
LA French  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9947693	A1	19990923	WO 1999-FR625	19990318
	W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				



RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

FR 2776302	A1	19990924	FR 1998-3349	19980319
FR 2776302	B1	20020412		
AU 9928427	A1	19991011	AU 1999-28427	19990318
EP 1062358	A1	20001227	EP 1999-909036	19990318
EP 1062358	B1	20030604		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI

JP 2002506653	T2	20020305	JP 2000-536876	19990318
AT 242333	E	20030615	AT 1999-909036	19990318
PT 1062358	T	20031031	PT 1999-909036	19990318
ES 2196783	T3	20031216	ES 1999-909036	19990318
US 6558931	B1	20030506	US 2000-646517	20001031

PRAI FR 1998-3349 A 19980319  
 WO 1999-FR625 W 19990318

AB The invention concerns a method for preparing **fexofenadine** from **terfenadine** by a bioconversion process using *Absidia corymbifera* LCP 63-1800 or *Streptomyces platensis* NRRL 2364 strain.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Novel method for preparing **fexofenadine**

AB The invention concerns a method for preparing **fexofenadine** from **terfenadine** by a bioconversion process using *Absidia corymbifera* LCP 63-1800 or *Streptomyces platensis* NRRL 2364 strain.

ST **terfenadine** *Absidia* *Streptomyces* **fexofenadine** fermn

IT *Absidia*

*Absidia corymbifera*

*Actinomucor elegans*

*Cunninghamella*

Fermentation

*Streptomyces*

*Streptomyces platensis*

(preparing **fexofenadine** from **terfenadine** by *Absidia corymbifera* or *Streptomyces platensis*)

IT 50679-08-8P, **Terfenadine**

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparing **fexofenadine** from **terfenadine** by *Absidia corymbifera* or *Streptomyces platensis*)

IT 76815-56-0

RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)

(preparing **fexofenadine** from **terfenadine** by *Absidia corymbifera* or *Streptomyces platensis*)

IT 83799-24-0, **Fexofenadine**

RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)

(preparing **fexofenadine** from **terfenadine** by *Absidia corymbifera* or *Streptomyces platensis*)

IT 213013-68-4P 213013-69-5P, **Terfenadine** phosphate

RL: BYP (Byproduct); PREP (Preparation)

(preparing **fexofenadine** from **terfenadine** by *Absidia corymbifera* or *Streptomyces platensis*)